

CLAIMS

We claim:

1. A reinforced sleeve, comprising:  
5 an elongated carrier, and  
a reinforcing medium supported by the carrier, wherein the reinforcing  
medium extends along at least a portion of the length of the carrier.
2. The reinforced sleeve as defined in claim 1, wherein the carrier is made  
10 from a polymer composite.
3. The reinforced sleeve as defined in claim 2, wherein the polymer  
composite is one selected from the group consisting of sheet molding compound, fiber  
reinforced polymer, and mineral reinforced polymer.
- 15 4. The reinforced sleeve defined in claim 1, wherein the carrier is coupled  
to an automobile frame system.
5. The reinforced sleeve defined in claim 1, wherein the reinforcing  
20 medium is an epoxy-based resin.
6. The reinforced sleeve defined in claim 5, wherein the reinforcing  
medium is L5206 structural foam commercially available from L&L Products of  
Romeo, Michigan.

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7. The reinforced sleeve defined in claim 5, wherein the reinforcing medium is L5207 structural foam commercially available from L&L Products of Romeo, Michigan.

5 8. The reinforced sleeve defined in claim 5, wherein the reinforcing medium is L5208 structural foam commercially available from L&L Products of Romeo, Michigan.

9. The reinforced sleeve defined in claim 5, wherein the reinforcing  
10 medium is L5209 structural foam commercially available from L&L Products of Romeo, Michigan.

10. The reinforced sleeve defined in claim 1, wherein the carrier has an offsetting portion that creates a clearance between the sleeve and a surface of an  
15 automobile frame when the sleeve is coupled to the automobile frame.

11. A reinforced automobile pillar, comprising:  
an elongated hollow beam;  
a sleeve received in the hollow beam, the sleeve including an elongated  
20 carrier; and  
a reinforcing medium supported by the carrier, wherein the reinforcing medium extends along at least a portion of the length of the carrier.

12. The reinforced automobile pillar defined in claim 11, wherein the  
25 carrier is a polymer composite.

13. The reinforced sleeve as defined in claim 12, wherein the polymer composite is one selected from the group consisting of sheet molding compound, fiber reinforced polymer, and mineral reinforced polymer.

14. The reinforced automobile pillar defined in claim 11, wherein the reinforcing medium is an epoxy-based resin.

5           15. The reinforced automobile pillar defined in claim 14, wherein the reinforcing medium is L5206 structural foam commercially available from L&L Products of Romeo, Michigan.

10           16. The reinforced automobile pillar defined in claim 14, wherein the reinforcing medium is L5207 structural foam commercially available from L&L Products of Romeo, Michigan.

15           17. The reinforced automobile pillar defined in claim 14, wherein the reinforcing medium is L5208 structural foam commercially available from L&L Products of Romeo, Michigan.

18. The reinforced automobile pillar defined in claim 14, wherein the reinforcing medium is L5209 structural foam commercially available from L&L Products of Romeo, Michigan.

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19. The reinforced automobile pillar defined in claim 11, wherein the carrier has an offset portion that creates a clearance between the sleeve and a surface of the hollow beam.

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